

INTERNATIONAL SEARCH REPORT

Rec'd PCT/PTO 25 FEB 2005

International application No.

PCT/JP03/11310

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl.⁷ B01J35/04, B01D53/86, F01N3/02, B01D39/20, B28B3/26

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.⁷ B01J21/00-38/74, B01D46/00-46/54, F01N3/00-3/02,
F01N3/04-3/38, F01N9/00, B28B3/26

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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Kokai Jitsuyo Shinan Koho	1971-2003	Jitsuyo Shinan Toroku Koho	1996-2003

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5393587 A (NGK INSULATORS, LTD.), 28 February, 1995 (28.02.95), Claims 1, 2, 5, 7; column 4, lines 13 to 16; examples & JP 6-159049 A Claims 1, 2, 5, 7; Par. No. [0012]; examples	1-12
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 36418/1984 (Laid-open No. 147711/1985) (Nissan Motor Co., Ltd.), 01 October, 1985 (01.10.85), Claims (Family: none)	1-12

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not
considered to be of particular relevance"E" earlier document but published on or after the international filing
date"L" document which may throw doubts on priority claim(s) or which is
cited to establish the publication date of another citation or other
special reason (as specified)"O" document referring to an oral disclosure, use, exhibition or other
means"P" document published prior to the international filing date but later
than the priority date claimed"T" later document published after the international filing date or
priority date and not in conflict with the application but cited to
understand the principle or theory underlying the invention"X" document of particular relevance; the claimed invention cannot be
considered novel or cannot be considered to involve an inventive
step when the document is taken alone"Y" document of particular relevance; the claimed invention cannot be
considered to involve an inventive step when the document is
combined with one or more other such documents, such
combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
02 December, 2003 (02.12.03)Date of mailing of the international search report
16 December, 2003 (16.12.03)Name and mailing address of the ISA/
Japanese Patent Office

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INTERNATIONAL SEARCH REPORT

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 824183 A2 (CORNING INC.), 18 February, 1998 (18.02.98), Claim 4; page 5, line 48 to page 6, line 1 & JP 10-180915 A Claim 4; Par. Nos. [0037] to [0039] & US 5866080 A	1-12
Y	JP 62-27044 A (Ube Industries, Ltd.), 05 February, 1987 (05.02.87), Claims 1 to 3; page 3, upper left column, lines 3 to 10 (Family: none)	3
Y	JP 61-129016 A (Cataler Kogyo Kabushiki Kaisha), 17 June, 1986 (17.06.86), Claims 1, 2; page 3, lower left column, line 12 to lower right column, line 10 (Family: none)	8,10,11
X A	JP 9-290413 A (Ibiden Co., Ltd.), 11 November, 1997 (11.11.97), Claims 1, 2; Par. Nos. [0019], [0024] (Family: none)	13-16 17
A	JP 54-87763 A (NGK Spark Plug Co., Ltd.), 12 July, 1979 (12.07.79), Claim 1; page 2, lower right column, line 4 to page 3, upper left column, line 3 (Family: none)	17